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**(54) Title:** APPLICATION OF DNA VECTORS FOR THE TREATMENT OF VIRAL INFECTION**(57) Abstract**

The present invention relates to DNA-based constructs and methods for treating viral infections. In a preferred embodiment, an HSV based amplicon is topically applied to the site of an actively replicating HSV infection, initiating a four-tier anti-viral therapy. First, IFN- $\gamma$  expression from a constitutive promoter exerts an antiviral effect at the site of active infection. Second, replication machinery of the resident virus packages the amplicon into HSV virions, *in situ*, thereby decreasing the infectious titer. Third, HSV virion containing amplicon DNA are transported into the nervous system where IFN- $\gamma$  expression promotes the establishment of latency. Fourth, as the host is exposed to emotional or physical stressor that reactivate the virus, amplicon-directed IFN- $\gamma$  is expressed. Increasing titers of IFN- $\gamma$  enforce viral latency.